HIGH PRECISION DUAL CHANNEL OUTPUT DC POWER SUPPLY

PPH-1503D

NEW

CE | USB Host | USB Device | PC Software | LAN | GPIB | LabVIEW Driver | Front Output | Rear Output

PPH-1503D is equipped with the excellent transient recovery time, which can, in less than 40us, recover the output voltage to within 100mV of the previous voltage output when the current level changes from 10% to 100% of the full scale. Furthermore, conventional power supplies do not have sufficient response speed to promptly respond to set voltage value once the set voltage is changed. PPH-1503D has a rise time of 0.2ms and a fall time of 0.3ms, which are 100 times faster than that of conventional power supplies. Therefore, PPH-1503D can provide DUT with a stable output voltage even when DUT is operating under large transient current output. The internal high-speed sampling circuit design of PPH-1503D, with the sample rate of 64K, can conduct pulse current measurement without using a current probe and oscilloscope. The current read back accuracy is 0.2%+1μA (equals to 11μA) at 5mA range, and the read back resolution is 0.1uA that allow DUT to be measured with a high accuracy level. Unlike battery, general power supplies, which do not have the characteristics of fast transient recovery time, can not maintain a stable power supply for cellular phone, wireless device, and wearable device which produce large transient pulse current load for hundreds of μs to dozens of ms when in use. PPH-1503D, different from general power supplies, has the characteristics of fast transient recovery time. While simulating battery to output pulse current, PPH-1503D can quickly compensate the voltage drop caused by pulse current. CH1 has the built-in battery simulation function, which can define output impedance settings so as to accurately simulate battery's impedance characteristics during battery discharge. Fast transient recovery time and built-in battery simulation function together facilitate PPH-1503D to accurately simulate battery's real behavior pattern so as to conduct product tests.

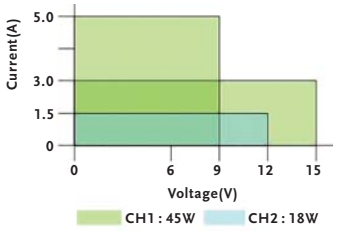
The sink current function allows PPH-1503D to simulate a voltage source with the sink current capability. The maximum sink current of PPH-1503D's CH1 is 3.5A and for CH2 is 2A. Long integration current measurement can be utilized to conduct average current measurement for periodical pulse current in a long period of time that is applied to analyze power consumption for a period of time. One of the applications is to measure the average power consumption of a cellular phone in use so as to conduct the internal RF module parameter analysis. The maximum current measurement range of CH1 is 5A and for CH2 is 1.5A. The built-in sequence function of CH1 provides users with 1000 steps to edit sequential outputs, including voltage, current and execution time. The built-in DVM function of CH2 has a voltage range from 0 to +20VDC that saves users the cost of purchasing an additional voltage meter.

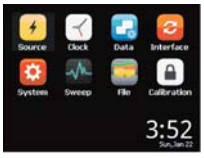
PPH-1503D provides OTP function and shows heat sink temperature on the upper right corner of the display screen. Other than that, features such as five sets of system setting values for the SAVE/RECALL function, 10 sets of Power On Setup Settings, Key-Lock function to prevent unauthorized inputs, temperature-controlled fan to reduce noise, hardcopy to save screen information, and external relay control device together augment PPH-1503D's usability. PPH-1503D supports test requirements of Profile1, Profile2 and Profile3 from USB Power Delivery (PD) constructed by USB-IF association.

Dual Operating Range for PPH-1503D

PPH-1503D	CH1	CH2
POWER	45W	18W
Range 1	0~15V/0~3A	0~12V/0~1.5A
Range 2	0~9V/0~5A	NA

PPH-1503D OPERATING AREA





Main Screen

Voltage/ Current setting and Temperature Display

Pulse Current Measurement

Long Integration Measurement

FEATURES

- Dual Channel DC Power Output
- Ch1 : 45W (0~15V/0~3A or 0~9V/0~5A)
  Ch2 : 18W (0~12V/0~1.5A)
- 3.5 inch TFT LCD Display
- Built-in DVM Measurement Function
- High Measurement Resolution
  (1mV/0.1 μ A for 5mA Range)
- Current Sink Function (Maximum : 3.5A)
- Pulse Current Measurement(Pulse width min:33μs)
- Long Integration Current Measurement
- Sequence Function (Sequential power output)
- Built-in Battery Simulation Function
- OVP, OCP, OTP & Temperature Display for Heat Sink
- Support USB (Device& Host)/GPIB/LAN
- 5 Groups of Save/Recall Setting
- External RELAY Control

Front

Rear Panel

APPLICATIONS

- Pulse current measurement and battery simulation function are ideal for blue tooth, wearable device and mobile communications device.
- Ideal for high precision low power consumption component applications such as current measurements for laser diode, IC with small power consumption.
- Power supply and sink current functions are suitable for charge and discharge applications for battery, mobile power pack.
- Sequence function is ideal for simulating a sequential voltage variation power output to test DUT.
- PPH-1503D can simulate a battery or a charger to conduct charge and discharge tests on DUT.
- Ideal for industries with small current measurements especially electrochemistry such as electroplating and electrolyte parameters.
- Four Wire Output Open Protection can avoid product damages caused by automatic production line's disconnection and probe's bad connection.

GW INSTEK
Simply Reliable

OUTPUT RATING	**Number of output channel** **Voltage** **Current** **Power** **Output Voltage Rising Time** **Output Voltage Falling Time**	Ch 1 0 ~ 15V 0 ~ 5A (9V); 0 ~ 3A (15V) 45W 0.20ms (10% ~ 90%) 0.30ms (90% ~ 10%)	Ch 2 0 ~ 12V 0 ~ 1.5A 18W 0.20ms (10% ~ 90%) 0.30ms (90% ~ 10%)
STABILITY	**Voltage** **Current**	0.01%+3.0mV NA	0.01%+3.0mV NA
REGULATION (CV)	**Load** **Line**	0.01%+2mV 0.5mV	0.01%+2mV 0.5mV
REGULATION (CC)	**Load** **Line**	0.01%+1mA 0.5mA	0.01%+1mA 0.5mA
RIPPLE & NOISE	**CV p-p (20Hz~20MHz)** **CV rms (0~1MHz)** **CC rms**	8mV 3mV NA	8mV 3mV NA
PROGRAMMING ACCURACY	**Voltage** **Current (1.5A or 5A)** **Current (500mA)** **Current (5mA)**	±(0.05%+10mV) ±(0.16%+5mA) ±(0.16%+0.5mA) ±(0.16%+5 μA)	±(0.05%+10mV) ±(0.16%+5mA) NA NA
READBACK ACCURACY	**Voltage** **Current (1.5A or 5A)** **Current (500mA)** **Current (5mA)**	±(0.05%+3mV) ±(0.2%+400 μA) ±(0.2%+100 μA) ±(0.2%+1 μA)	±(0.05%+3mV) ±(0.2%+400 μA) NA ±(0.2%+1 μA)
RESPONSE TIME **(Response to 1000% Load Change)**	**Transient Recovery Time**	1000% Load Change;<40 μS(<100mV, Rear) <50 μS(<100mV Front);<80 μS(<20mV)	1000% Load Change;<40 μS(<100mV Rear) <80 μS(<20mV)
PROGRAMMING RESOLUTION	**Voltage** **Current** **Current** **Current**	2.5mV 1.25mA(range: 5A) 0.125mA(range: 500mA) 1.25 μA(range: 5mA)	2.5mV 1.25mA(range: 1.5A) NA NA
READBACK RESOLUTION	**Voltage** **Current** **Current** **Current**	1mV 0.1mA(range: 5A) 0.01mA(range: 500mA) 0.1 μA(range: 5mA)	1mV 0.1mA(range: 1.5A) NA 0.1 μA(range: 5mA)
PROTECTION FUNCTION	**OVP Accuracy**	50V	50mV
DVM	**DC Readback Accuracy(23℃± 5℃)** **Readbck Resolution** **Input Voltage Range** **Maximum Input Voltage** **Input Resistance and Capacitance**	—	±0.05%+3mV 1mV 0 ~ 20VDC -3V, +22V 20MΩ
PROGRAMMABLE OUTPUT RESISTANCE	**Range** **Programming Accuracy** **Resolution**	1 mΩ ~ +1 Ω 0.5% + 10 mΩ 1mΩ	—
PULSE CURRENT MEASUREMENT	**Trigger Level** **High Time/low Time/Average Time** **Trigger Delay** **Average Readings** **Long Integration Pulse Timeout** **Long Integration** **Measurement Time** **Long Integration Trigger Mode**	5mA ~ 5A, 5mA/Step 33.3 μs ~ 833ms, 33.3 μs/Step 0 ~ 100ms,10 μs/Steps 1 ~ 100 1S ~ 63S 850ms(60Hz)/840ms(50Hz)~60s, or Auto time 16.7ms/Steps(60Hz), 20ms/Steps(50Hz) Rising, Falling, Neither	5mA ~ 1.5A, 5mA/Step 33.3 μs ~ 833ms, 33.3 μs/Step 0 ~ 100ms,10 μs/Steps 1 ~ 100 1S ~ 63S 850ms(60Hz)/840ms(50Hz)~60s, or Auto time 16.7ms/Steps(60Hz), 20ms/Steps(50Hz) Rising, Falling, Neither
CURRENT SINK CAPACITY	**Sink Current Rating**	3.5A(Vout≦4V); 3.5A-0.25x(Vout-4)(Vout>4V)	2A(Vout≦5V); 2A-0.1x(Vout-5)(Vout>5V)
OTHERS	**Output Terminal** **DVM Input**	Front/Rear Panel NA	Rear Panel Front Panel
	Relay Control Connector **Operation Temperature** **Operation Humidity** **Storage Temperature** **Storage Humidity**	150mA/15V , 100mA/5V output 0 ~ 40°C □ 80% -20°C ~ 70°C < 80%	
PC REMOTE INTERFACES	**Standard**	GPIB/USB/LAN	
PC SOFTWARE & LABVIEW DRIVER	**Free**	PC Software/Labview Driver	
MEMORY	**Save/Recall**	5 組	
POWER	**Input Power** **Power Consumption**	90 ~ 264VAC ; 50/60Hz 160W	
DIMENSIONS & WEIGHT		222(W) x 86(H) x 363(D) mm; Approx 4.5kg	

Specifications subject to change without notice. PH-1503DGD1DH

PPH-1503D **High Precision Dual Channel Output DC Power Supply**

CD (User manual x1), Quick Start manual x1, Power cord (Region dependent), Test lead GTL-117 x1(10A Maximum), GTL-203A x1(3A Maximum), GTL-204A x1(10A Maximum)

GTL-246 USB Cable (USB 2.0, A-B Type)

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